

Aerator Type ABS Venturi Jet

SULZER

Jet aerator with single or twin diffuser pipes, for fixed or portable installation, coupled to a Premium Efficiency pump from the XFP range.

Applications

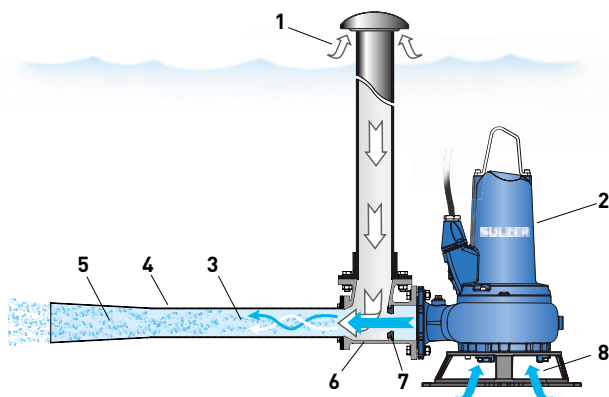
For the combined aeration and mixing of wastewater in small and medium sized tanks. Also for the cleaning of storm water tanks and for use in balancing tanks where a combination of aeration and mixing reduces septicity and minimizes odours.

Features

- Stand-alone, self-aspirating system, with the option of fixed installation with guide rail and pedestal, or portable installation with stand. The portable option is especially suitable for emergency or intermittent aeration tasks and allows for variable positioning in the tank.
- Uses standard XFP pump featuring continuously rated Premium Efficiency motor, temperature and seal monitoring, and double mechanical seals.
- Blockage-free hydraulic design with Contrablock impeller.
- Lower noise levels and reduced spray compared to surface systems.
- Maximum allowable temperature of the medium for continuous operation is 40 °C.

Venturi injection principle

The venturi jet aerator is based on the injection principle that produces an effective air-water mix which results in optimum aeration and suspension of solids. The velocity of the primary flow of liquid from the pump is accelerated when pumped through the smaller nozzle inlet, lowering the internal pressure which draws in the secondary flow of air through the air inlet pipe. The liquid and air flows are then mixed in the turbulence of the diffuser pipe and ejected as a jet of fine air bubbles into the tank.



- | | |
|-------------------------|----------------------------|
| 1. Air inflow | 5. Mixed flow |
| 2. XFP submersible pump | 6. Venturi chamber housing |
| 3. Mixing zone | 7. Nozzle inlet |
| 4. Diffuser pipe | 8. Liquid inflow |



Motor

Premium Efficiency IE3, three-phase, squirrel-cage motor; 460 V; 60 Hz; 4-pole (1750 r/min) and 6-pole (1180 r/min).

Protection type: IP 68

Stator insulation: Class H.

Start-up: DOL (direct on line)

Cooling: 100C - 150E self-cooling,
150G & 201G version with closed cooling system.

Service factor: 1.3

Notes

1. Stand and pedestal supplied as accessories.
2. Air inflow pipe and fittings, elbows, and flanges supplied by the customer.

Materials

| | Description | Material |
|---------|-------------------------|-----------------------------------|
| Aerator | Diffuser pipe | Stainless steel 1.4301 (AISI 304) |
| | Venturi chamber housing | Cast iron EN-GJL-200 |
| Pump | Motor housing | Cast iron EN-GJL-250 |
| | Motor shaft | Stainless steel 1.4021 (AISI 420) |
| | Impeller | Cast iron EN-GJL-250 |
| | Volute | Cast iron EN-GJL-250 |
| | Bottom plate | Cast iron EN-GJL-250 |
| | Lifting hoop | Stainless steel 1.4401 (AISI 316) |
| | Fasteners | Stainless steel 1.4401 (AISI 316) |

Technical data

| XFP pump | Pump discharge DN | Aerator inlet DN | Nozzle ϕ mm | Water flow m ³ /h | Motor power * (kW) | | Rated current (A) | Cable size | Weight ** (pump) kg |
|-----------------------------------|-------------------|------------------|------------------|------------------------------|--------------------|----------------|-------------------|--------------|---------------------|
| | | | | | P ₁ | P ₂ | | | |
| 100C-CB1.2-PE20/6 | 100 | 100 | 55 | 50 | 2.4 | 2.0 | 4.2 | SOOW 14/7 | 109 |
| 100C-CB1.1-PE20/6 | 100 | 100 | 55 | 70 | 2.4 | 2.0 | 4.2 | SOOW 14/7 | 109 |
| 100C-CB1.4-PE35/4 | 100 | 100 | 55 | 100 | 3.9 | 3.5 | 6.2 | SOOW 14/7 | 109 |
| 150E-CB1.7-PE45/4 | 150 | 150 | 80 | 140 | 5.0 | 4.5 | 8.2 | SOOW 14/7 | 168 |
| 150E-CB1.6-PE75/4 | 150 | 150 | 80 | 190 | 8.2 | 7.5 | 13.8 | SOOW 12/7 | 186 |
| 150E-CB1.4-PE105/4 | 150 | 150 | 80 | 240 | 11.4 | 10.5 | 17.7 | SOOW 10/7 | 198 |
| 150G-CB1.7-PE185/4 | 150 | 150 | 80 | 315 | 19.8 | 18.5 | 32.3 | AWM 8/4+16/3 | 445 |
| 201G-CB2.2-PE200/6 ⁽¹⁾ | 200 | 150 | 80 | 500 | 21.5 | 20.0 | 32.7 | AWM 8/4+16/3 | 475 |

⁽¹⁾ XFP 201G requires twin aerators. DN 150 T-piece, 2 x DN 150 elbows and DN 200 / DN 150 adaptor flange required for connection to pump discharge.

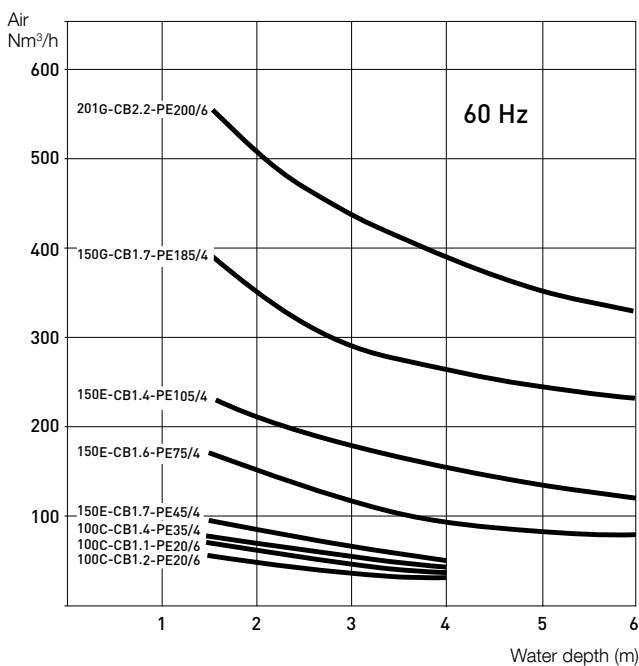
* P₁ = power at mains. P₂ = power at motor shaft.

** Aerator weight: DN 100 = 20 kg, DN 150 = 40 kg (does not include air inlet pipe or fittings). Portable stand: 100C = 9.5 kg, 100 & 150E = 10.5 kg, 150 & 201G = 17.5 kg.

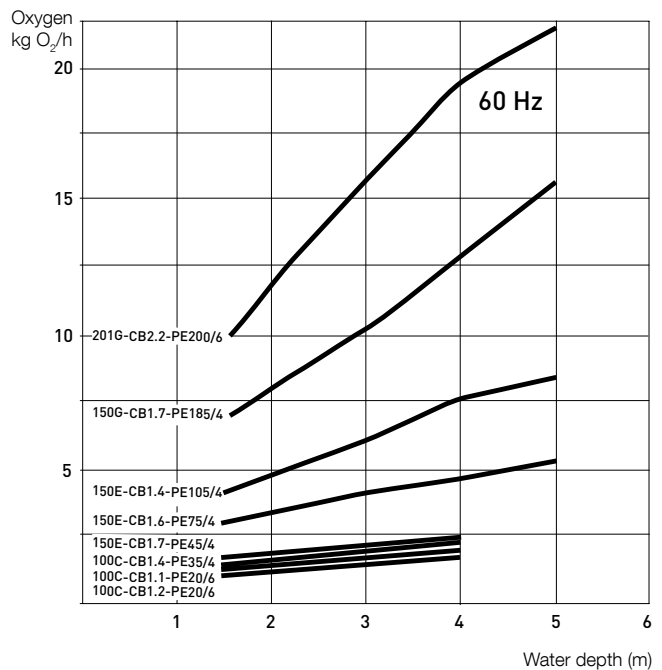
Aerator selection / Tank dimensions (m)

| XFP pump | Wastewater tank (sample size) | | | Storm water tank (sample size) | | |
|--------------------|-------------------------------|--------|-------------|-----------------------------------|-------------------------------|----------------------------|
| | Rectangular | Square | Circular | Rectangular (outflow at one side) | Rectangular (central channel) | Circular (central outflow) |
| 100C-CB1.2-PE20/6 | 6.0 X 4.0 | 4.9 | ϕ 5.5 | - | - | - |
| 100C-CB1.1-PE20/6 | 7.2 X 4.8 | 5.9 | ϕ 6.6 | - | - | - |
| 100C-CB1.4-PE35/4 | 8.0 X 5.3 | 6.5 | ϕ 7.4 | 8.0 X 6.0 | 8.0 X 5.0 | ϕ 5.5 |
| 150E-CB1.7-PE45/4 | 9.5 X 6.3 | 7.8 | ϕ 8.8 | 12.0 X 8.0 | 10.0 X 6.5 | ϕ 6.5 |
| 150E-CB1.6-PE75/4 | 12.0 X 8.0 | 9.8 | ϕ 11.1 | 18.0 X 10.0 | 15.0 X 8.0 | ϕ 8.0 |
| 150E-CB1.4-PE105/4 | 15.0 X 10.0 | 12.2 | ϕ 13.8 | 22.0 X 12.0 | 20.0 X 10.0 | ϕ 13.0 |
| 150G-CB1.7-PE185/4 | 17.5 X 11.5 | 14.2 | ϕ 16.0 | 24.0 X 13.0 | 22.0 X 10.0 | ϕ 14.0 |
| 201G-CB2.2-PE200/6 | 21.0 X 13.0 | 16.4 | ϕ 18.0 | 27.0 X 14.0 | 24.0 X 10.0 | - |

Air flow performance



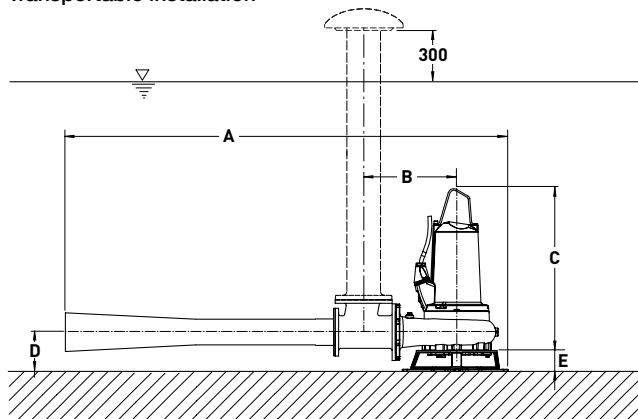
Oxygen transfer performance



Oxygen transfer data measured as per "Measurement of Oxygen Transfer in Clean Water" ASCE Standard 2-06, 2006.

Dimensions (mm)

Transportable installation



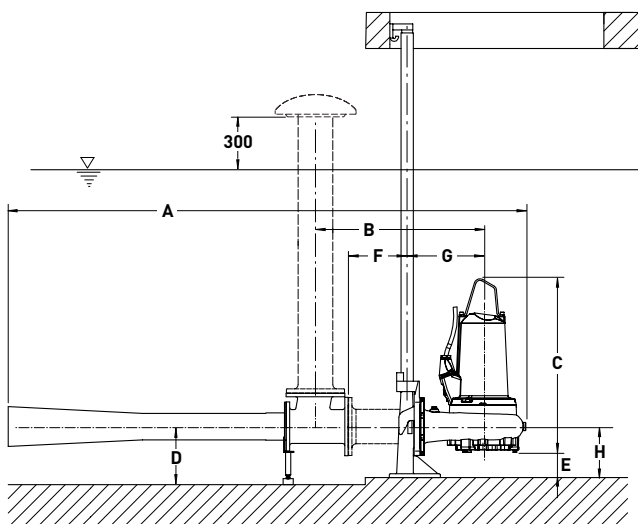
Note: in some cases the support stand may need to be weighted to the tank base to prevent lateral movement of the unit.

| | 100C | 150E | | | 150G | 201G* |
|----------|------|--------|--------|---------|------|-------|
| | | PE45/4 | PE75/4 | PE105/4 | | |
| A | 1596 | 2239 | 2239 | 2239 | 2319 | 2384* |
| B | 390 | 471 | 471 | 471 | 496 | 543* |
| C | 686 | 749 | 749 | 819 | 1261 | 1348 |
| D | 193 | 198 | 198 | 198 | 300 | 320 |
| E | 105 | 105 | 105 | 105 | 200 | 200 |

* Twin aerators as standard and only.

Required: DN 150 T-piece, 2 x DN 150 elbows and DN 200 / DN 150 adaptor flange for connecting to pump discharge (not included in dimension; supplied by the customer).

Installation with straight pedestal

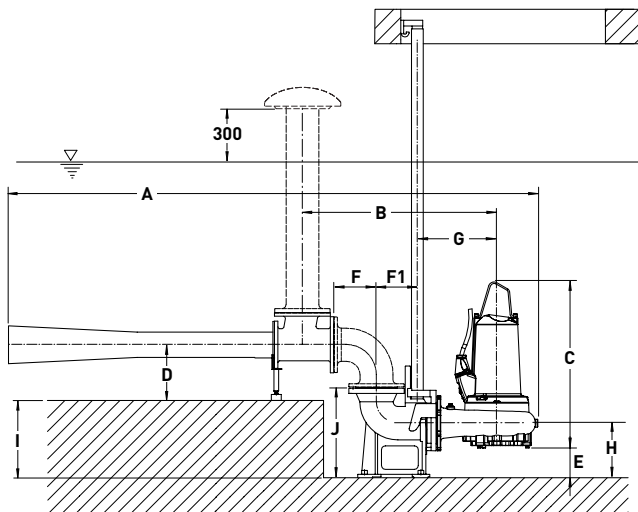


| | 100C | 150E | | | 150G | 201G |
|----------|--------|--------|--------|---------|--------|--------|
| | | PE45/4 | PE75/4 | PE105/4 | | |
| A | 1594+F | 2251+F | 2251+F | 2251+F | 2316+F | 2505+F |
| B | 442+F | 531+F | 531+F | 531+F | 556+F | 995+F |
| C | 716 | 783 | 783 | 853 | 1297 | 1348 |
| D | 289 | 286 | 286 | 286 | 286 | 286 |
| E | 82 | 123 | 123 | 123 | 114 | 119 |
| F | ** | ** | ** | ** | ** | ** |
| G | 318 | 372 | 372 | 372 | 397 | 546 |
| H | 200 | 250 | 250 | 250 | 250 | 240 |

** Variable dimension (supplied, and dimensions specified, by customer).

Required: DN 100 or DN 150 flange for XFP 100C - 150G, DN 150 T-piece, 2 x DN 150 elbows and DN 200 / DN 150 adaptor flange for XFP 201G.

Installation with 90° pedestal (duckfoot)



| | 100C | 150E | | | 150G | 201G |
|-----------|--------|--------|--------|---------|--------|--------|
| | | PE45/4 | PE75/4 | PE105/4 | | |
| A | 1816+F | 2497+F | 2497+F | 2497+F | 2562+F | 2788+F |
| B | 661+F | 777+F | 777+F | 777+F | 802+F | 988+F |
| C | 716 | 783 | 783 | 853 | 1297 | 1348 |
| D | 289 | 286 | 286 | 286 | 286 | 286 |
| E | 107 | 153 | 153 | 153 | 144 | 158 |
| F | ** | ** | ** | ** | ** | ** |
| F1 | 180 | 210 | 210 | 210 | 210 | 297 |
| G | 357 | 408 | 408 | 408 | 433 | 533 |
| H | 225 | 280 | 280 | 280 | 280 | 325 |
| I | 262 | 397 | 397 | 397 | 397 | 524 |
| J | 371 | 463 | 463 | 463 | 463 | 550 |

** Variable dimension (supplied, and dimensions specified, by customer).

Required: DN 100 or DN 150 elbow for XFP 100C - 150G, DN 150 T-piece, 2 x DN 150 elbows and DN 200 / DN 150 adaptor elbow for XFP 201G.

Note: further and more detailed dimension drawings for all installation types are available on Sulzer.com or by request.

Accessories

| | Description | Size | XFP | | Part no. | | |
|--|---|------------------------------------|--------------------------------------|--|-------------------|-------------|----------|
| Fixed installation - wet well with Sulzer Automatic Coupling System | Pedestal (kit)* (cast iron EN-GJL-250) 90° cast bend (single guide rail) - DIN flange connection | DN 100 | 100C & 100E | | 62320652 | | |
| | | DN 150 | 150E & 150G | | 62320655 | | |
| | | DN 200 | 200G | | DPT91211A | | |
| | Pedestal (components)* cast iron EN-GJL-250 straight (single guide rail) - DIN flange connection | DN 100 | 100C & 100E | Gasket | 14020018 | | |
| | | | | Base | 32560611 | | |
| | | | | Bracket | 41420520 | | |
| | | DN 150 | 150E & 150G | Seal | 43070518 | | |
| | | | | Guide piece | 31450510 | | |
| | | | | Gasket | 14020020 | | |
| | DN 200 | 200G | Base | 32560620 | | | |
| Bracket | | | 31420535 | | | | |
| Seal | | | 43070519 | | | | |
| Pedestal bracket fasteners single guide rail version (galvanised steel) | | 100C & 100E 150E & 150G 200G | Seal | 31450510 | | | |
| | | | Guide piece | 31450510 | | | |
| | | | On request | | | | |
| single guide rail version (stainless steel) | | 100C & 100E 150E & 150G 200G | Gasket | 62610633 | | | |
| | | | Base | 62610635 | | | |
| | | | Bracket | 62610883 | | | |
| Pedestal base anchor bolts single and twin guide rail (galvanised steel) | | 100C & 100E 150E & 150G 200G | Seal | 62610637 | | | |
| | | | Guide piece | 62610639 | | | |
| | | | On request | 62610862 | | | |
| Chain kit (stainless steel) including shackle | 3 m 4 m 6 m 7 m | 100C - 200G | | 62610775 | | | |
| | | | | 62610784 | | | |
| | | | | 62610785 | | | |
| | | | | | | | |
| Transportable | Ground support stand | | 100C 100E 150E 150G & 200G. | 61355016 | | | |
| | | | | 61355018 | | | |
| | | | | 61355019 | | | |
| | | | | 61355025 | | | |
| General | Cathodic protection (zinc anodes) | | 100C - 200G | 13905000 | | | |
| | | | | Leakage relay type ABS CA 461 | 110 - 230 VAC | 100C - 200G | 16907010 |
| | | | | | 18 - 36 VDC, SELV | | 16907011 |
| | | | | Temperature and leakage relay type ABS CA 462 | 110 - 230 VAC | 100C - 200G | 16907006 |
| 18 - 36 VDC, SELV | | 16907007 | | | | | |

* Guide rail not included.